

$$0 \quad 1 \quad \frac{\partial N_p}{\partial t} + \nabla \cdot N_p \mu_p \vec{E} + N_p (N_n K_{rpn} + N_e K_{rpe}) - G(E) = 0$$

- Equation view
- Convection-Diffusion Equation 2 (cdeq2)
 - Convection-Diffusion Equation 1
 - Zero Flux 1
 - Initial Values 1
 - Coefficient Form PDE 1
 - Equation View
- Convection-Diffusion Equation 3 (cdeq3)

Show equation assuming...

Study 1, Time Dependent

$$e_a \frac{\partial^2 N_n}{\partial t^2} + d_a \frac{\partial N_n}{\partial t} + \nabla \cdot (-c \nabla N_n - a N_n + \gamma) + \beta \nabla N_n + a N_n = f$$

$$\nabla = \left[\frac{\partial}{\partial r}, \frac{\partial}{\partial z} \right]$$

Equation View

$$e_a \frac{\partial^2 N_n}{\partial t^2} + d_a \frac{\partial N_n}{\partial t} + \nabla \cdot (-c \nabla N_n - a N_n + \gamma) + \beta \nabla N_n + a N_n = f$$

$$\nabla = \left[\frac{\partial}{\partial r}, \frac{\partial}{\partial z} \right]$$

Diffusion Coefficient

c m^5

Isotropic

Absorption Coefficient

a m^3

Source Term

f

Mass Coefficient

e_a m^3

Damping or Mass Coefficient

d_a m^3

Conservative Flux Convection Coefficient

α m^4

I need to set all these 3 equation in convection-diffusion equation mode

This parameter causes error

$$\frac{\partial N_p}{\partial t} + \nabla \cdot (\vec{J}_{c,p}) = G_p(|\vec{E}|) - N_p N_n K_{rpn} - N_p N_e K_{rpe}$$

$$\frac{\partial N_n}{\partial t} - \nabla \cdot (\vec{J}_{c,n}) = \frac{N_e}{\tau_a} - N_p N_n K_{rpn}$$

$$\frac{\partial N_e}{\partial t} - \nabla \cdot (\vec{J}_{c,e}) = G_e(|\vec{E}|) - N_p N_e K_{rpe} - \frac{N_e}{\tau_a}$$

$$\nabla \cdot (-\epsilon_0 \epsilon_r \vec{E}) = (N_p - N_n - N_e) q N_A$$

$$\vec{J}_{c,p} = N_p \mu_p \vec{E}, \quad \vec{J}_{c,n} = N_n \mu_n \vec{E}, \quad \vec{J}_{c,e} = N_e \mu_e \vec{E}$$

$$G_F(|\vec{E}|) = \frac{q N_0 a |\vec{E}|}{h} \exp\left(-\frac{\pi^2 m^* a \Delta^2}{q h^2 |\vec{E}|}\right)$$

$$G_p(|\vec{E}|) = G_e(|\vec{E}|) = G_F(|\vec{E}|)$$

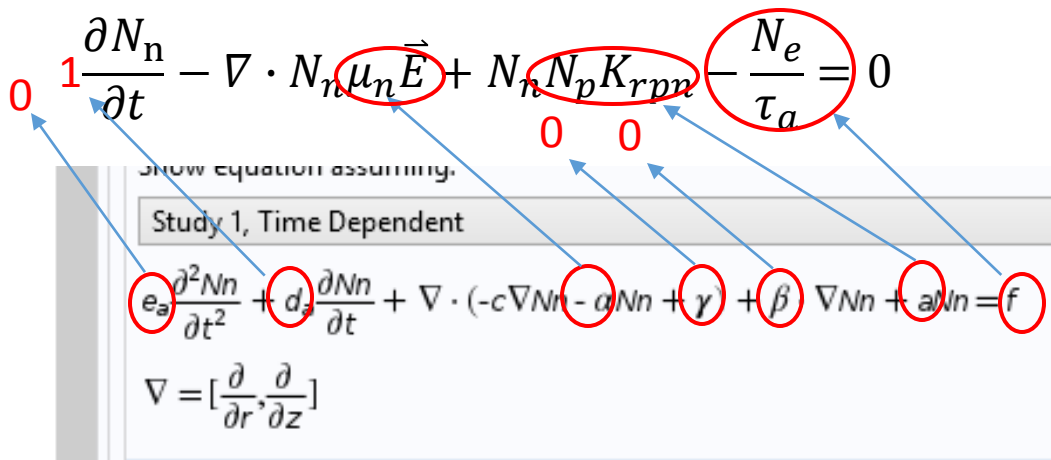
- Equation view
- ▲ ▽* Convection-Diffusion Equation 2 (cdeq2)
 - ▢ Convection-Diffusion Equation 1
 - ▢ Zero Flux 1
 - ▢ Initial Values 1
 - ▢ Coefficient Form PDE 1
 - $\frac{\partial u}{\partial t} = f$ Equation View
- ▲ ▽* Convection-Diffusion Equation 3 (cdeq3)

$$0 \quad 1 \frac{\partial N_n}{\partial t} - \nabla \cdot N_n \mu_n \vec{E} + N_n N_p K_{rpn} - \frac{N_e}{\tau_a} = 0$$

SHOW Equation assuming.

Study 1, Time Dependent

$$e_a \frac{\partial^2 N_n}{\partial t^2} + d_s \frac{\partial N_n}{\partial t} + \nabla \cdot (-c \nabla N_n - a N_n + \gamma) + \beta \nabla N_n + a N_n = f$$

$$\nabla = \left[\frac{\partial}{\partial r}, \frac{\partial}{\partial z} \right]$$


- Equation view
- ▼* Convection-Diffusion Equation 2 (cdeq2)
 - ▶ Convection-Diffusion Equation 1
 - ▶ Zero Flux 1
 - ▶ Initial Values 1
 - ▶ Coefficient Form PDE 1
 - Equation View
- ▼* Convection-Diffusion Equation 3 (cdeq3)

$$0 \quad 1 \quad \frac{\partial N_e}{\partial t} - \nabla \cdot N_e \mu_e \vec{E} + N_e (N_p K_{rpe} + \frac{1}{\tau_a}) - G(E) = 0$$

Show Equation assembly.

Study 1, Time Dependent

$$e_a \frac{\partial^2 Nn}{\partial t^2} + d_a \frac{\partial Nn}{\partial t} + \nabla \cdot (-c \nabla Nn - a Nn + \gamma) + \beta \nabla Nn + a Nn = f$$

$$\nabla = \left[\frac{\partial}{\partial r}, \frac{\partial}{\partial z} \right]$$